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Rectal Adenocarcinoma with Bilateral Psoas Muscle Abscess: A Case Report and Review of the Literature

Chang-Han Lo[1], Ya-Sung Yang[2], and Ching-Liang Ho[3*]

[1]Department of Internal Medicine; [2]Division of Infectious Diseases and Tropical Medicine, Department of Internal Medicine; [3]Division of Hematology and Oncology, Department of Internal Medicine, Tri-Service General Hospital, National Defense Medical Center, Taipei, Taiwan, Republic of China

Bilateral psoas abscess due to direct invasion of rectal cancer is a rare condition and has not been reported previously. A 57-year-old man with stage I rectal adenocarcinoma underwent low-anterior resection and adjuvant chemotherapy and showed complete response. However, 10 months after this operation, the disease recurred, with bladder invasion. Subsequently, he was admitted with low-grade fever accompanied by lower-back soreness and abdominal fullness for 1 month. Computed tomography (CT) of the abdomen showed several bilateral psoas muscle abscesses. Emergent CT-guided drainage of the bilateral abscess was performed, and a pus-like fluid was drained out. Microbiological culture of the pus revealed the presence of *Salmonella* group B, *Bacteroides caccae*, *Bacteroides fragilis*, and *Peptostreptococcus indolicus*. The patient recovered well after tube drainage and antibiotic therapy. Bilateral psoas muscle abscess due to direct invasion of rectal adenocarcinoma is unusual; however, with adequate drainage and administration of antibiotics, we were able to control this potentially fatal complication.

Key words: salmonella, psoas muscle abscess, colon cancer

INTRODUCTION

Psoas muscle abscesses is a retro-peritoneal infection[1-3], which can be classified as primary or secondary depending on the presence or absence of any underlying disease.[4] Primary psoas muscle abscess may be attributed to hematogenous spread of an infectious disease from an occult origin. Secondary psoas muscle abscess results from various intra-abdominal and retroperitoneal infections or inflammation. The most frequently reported etiology of secondary psoas muscle abscess is Crohn's disease, while colorectal cancer complicated with intra-abdominal abscess is rare with an incidence of 0.3%–0.4%.[5] Colorectal cancer related psoas muscle abscess is rarer still and usually unilateral. Bilateral psoas abscess in rectal adenocarcinoma has not been reported previously. Here, we present a case of bilateral psoas muscle abscess due to direct invasion of rectal cancer with mixed

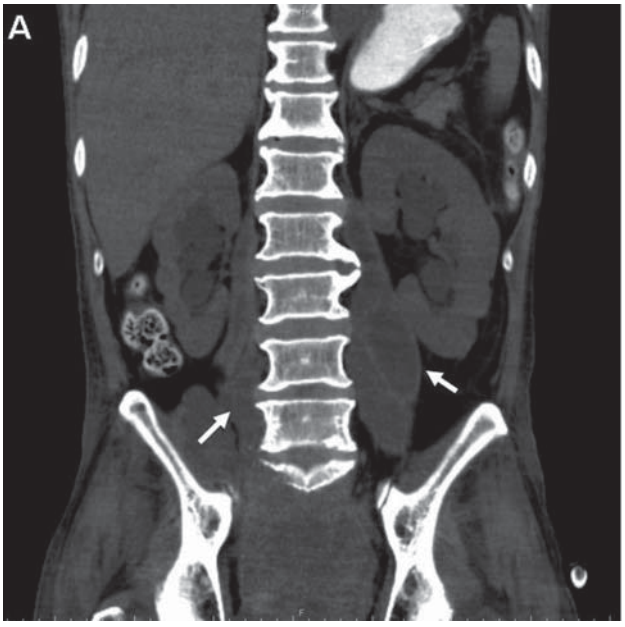

Fig. 1 Computed tomography (CT) of the abdomen showed several bilateral psoas muscle abscesses (arrow).

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*Corresponding author: Ching-Liang Ho, Division of Hematology and Oncology, Department of Internal Medicine, Tri-Service General Hospital, National Defense Medical Center, No. 325, Sec. 2, Cheng-gong Road, Taipei 114, Taiwan, Republic of China. Tel: +886-2-87923311 ext 12747; Fax: +886-2-87927209; E-mail: hochingliang@yahoo.com.tw

Table 1. Summary of five cases of colon cancer complicated with psoas abscess reported between 2002 and 2012.

Case number	Age/Sex	Cancer location	Pathogen	Antibiotic	Site of psoas abscess	Management	Outcome	Reference
1	85/F	Cecum	*Streptococcus, Prevotella buccae,* and *Bacteroides thetaiotaomicron*	IV fosfomycin	Right	LDOA	Recovery	Okita *et al*.[7]
2	27/F	D-colon	*Escherichia coli*	IV 2nd to 3rd generation cephalosporin and metronidazole	Left	Percutaneous drainage	Recovery	Lee *et al*.[8]
3	67/M	S-colon	*Escherichia coli* and other anaerobic bacteria	IV carbapenem	Left	Percutaneous drainage then LDOA	Recovery	Takakura *et al*.[9]
4	44/M	D-colon	*Streptococcus agalactiae* and *Streptococcus anginosus*	IV ciprofloxacin + metronidazole then IV 3rd generation cephalosporin and metronidazole	Left	Left hemicolectomy and drainage of abscess	Recovery	Yang *et al*.[10]
Our case	57/M	Rectum	*Salmonella group B, Bacteroides caccae, Bacteroides fragilis* and *Peptostreptococcus indolicus*	IV ampicillin + sulbactam	Bilateral	Bilateral: Percutaneous drainage	Recovery	

IV, intravenous; LDOA, Laparotomy with drainage of abscess

flora infection and *Salmonella* group B infection. The patient successfully recovered after medical treatment and percutaneous drainage.

CASE REPORT

A 57-year-old man with stage I rectal adenocarcinoma was treated with exploratory laparotomy, low-anterior resection, and adjuvant oral chemotherapy in another hospital. However, 10 months after the operation, the disease recurred with nearly total obstruction of the rectum and microperforation with intra-abdominal infection, bladder invasion, and pulmonary metastasis. He underwent exploratory laparotomy with T-loop colostomy and received local radiotherapy (whole pelvis: total dose, 4500 cGy in 25 fractions; tumor bed: total dose, 900 cGy in 5 fractions) and palliative chemotherapy with infusion of 5-FU (2400 mg/m^2) for 46 h and irinotecan (180 mg/m^2) for 90 min (FOLFIRI regimen). Subsequently, he was referred to our hospital because of low-grade fever accompanied by lower-back soreness and abdominal fullness for 1 month. Blood examination revealed a white blood cell count of 36.90×10^3/μL (normal range, 4.50–11.0×10^3/μL) and a high C-reactive protein level of 10.57 mg/dL (normal range, <0.50 mg/dL). Computed tomography (CT) scanning of the abdomen showed the presence of several cystic-like lesions (maximal size, 11.6×3.0×3.5 cm) in the bilateral psoas muscles; the psoas muscle abscesses was found (Figure A). Emergent CT-guided drainage of the bilateral abscess was performed, and an odorous pus was drained out. Microbiological culture of the pus revealed the presence of *Salmonella* group B, *Bacteroides caccae*, *Bacteroides fragilis*, and *Peptostreptococcus indolicus*. The patient received intravenous ampicillin (1 gm q6h) and sulbactam (500 mg q6h). The psoas muscle abscess resolved days later.

DISCUSSION

Psoas muscle abscess is a life-threatening complication. In previously reported cases of psoas abscesses, the abscess resulted from conditions such as tuberculous disease of the spine, infective spondylitis, Crohn's disease, and diverticulitis.[6] Colon cancer-associated psoas abscess is relatively rare, especially bilateral presentation with salmonella infection.

Salmonella group B-related bilateral psoas abscess due to direct invasion of rectal adenocarcinoma has not been reported thus far. There were four cases similar to our case between 2002 and 2012. All were caused by the distal part of colon cancer with unilateral presentation. A summary of the associated clinical features and man-

agement are given in Table 1.[7-10] Mixed flora infection, especially *Salmonella* group B infection, has only been observed in our patient in the past decade and only in our patient. All survived the potentially fatal infectious events after adequate drainage or surgical intervention.

The pathophysiology of psoas abscess induced by colon cancer remains unclear. We hypothesize the possible mechanism was ruptured colon cancer with direct infiltration or fistula formation with adjacent structures such as psoas muscles. In addition, we believe hematogenous spread of microbes had taken place if blood culture and pus culture demostrated the same bacteria strains.

In conclusion, we report a rare case of rectal adenocarcinoma with bilateral psoas muscle abscess. The pus culture revealed the presence of Salmonella group B, which has not been reported thus far.

DISCLOSURE

All authors declare no competing financial interests.

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